2004 RTP Performance Measures Update

TRANSPORTATION AND COMMUNICATIONS COMMITTEE ATTACHMENT #4.2
Thursday, March 6, 2003

REPORT

TO: Transportation and Communications Committee

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SUBJECT: **2004 RTP Performance Measures – Recommendations from RTP Technical Advisory Committee (TAC)**

EXECUTIVE DIRECTOR'S APPROVAL:

RECOMMENDED ACTION:

Approve the recommended performance measures for use in the 2004 RTP.

SUMMARY:

Recommended Performance Measures

In January 2003, the Regional Council approved the goals for the 2004 RTP based upon the recommendations of the TCC and TAC. The TAC has also been reviewing and improving upon the performance measures used in the 2001 RTP. The revised performance measures are intended to relate to the recently approved RTP goals. To the extent possible, the measures will also allow for regular monitoring of the transportation system's performance on a periodic basis.

To date, the TAC has discussed several performance measures that are now recommended to the TCC for approval:

- Mobility Performance Measures: It is recommended to use speed and delay as the performance measures for mobility. Speeds reflect actual speeds experienced by the travelers regardless of mode. Delay reflects the time delay resulting from the difference between a reference speed and actual speed.

- Accessibility Performance Measure: It is recommended to keep the current performance measure for accessibility which reflects the percent of travelers that can reach their destination within 45 minutes during the evening rush hour, or pm peak (3pm to 7pm). It is also recommended to present the distribution of trip times as complementary information in order to understand the trends in more detail.

- Reliability Performance Measure: It is recommended to add variation of travel time to reflect the reliability goal. The reliability measure reflects the changes in travel times experienced by travelers from day to day. This variability is a result of accidents, weather, road closures, system problems and other non-recurrent conditions. Note that this measure cannot be forecasted at this point, but can be monitored. Consequently, it can be used to assess current performance and provide valuable input as to which types of investments could lead to reliability improvements.

- Safety Performance Measure: It is recommended to keep current performance measures for safety which reflect accident rates, broken down by type (e.g., fatalities, injury, and property damage).

- Environmental Performance Measure: It is recommended to keep current performance measures for environmental impacts, which reflect emissions generated by travel (i.e., CO, NOX, PM10, SOX, and VOC). It is also recommended to provide estimates for carbon dioxide emissions as a secondary measure to reflect greenhouse emissions.

- Cost Effectiveness Performance Measure: It is recommended that the cost effectiveness measure be revised from the 2001 RTP to include impacts on vehicle operating costs. This recommendation will allow the measure to reflect the cost impacts of mode split changes that result from the RTP transportation investments and the changes in traveler costs when speeds improve.

- Geographic Equity Performance Measure: It is recommended to keep the current geographic equity measure which reflects the distribution of benefits and expenditures by sub-region.

- Environmental Justice Performance Measure: It is recommended that SCAG conduct its environmental justice analysis in the same manner as in 2001 with some revisions. The TAC recommends that SCAG work with AQMD to use the Urban AIRSHED Model (UAM) as part of the analysis.

Plan, Baseline, and Current Conditions

The TAC also recommends that all performance measures be shown in the 2004 RTP in comparison to current conditions as well as future baseline conditions. In the 2001 RTP, only comparisons with the future baseline were provided. In other words, it compares the performance of the system with the RTP investments to conditions that would exist in the future without such investments.

The TAC believes that by showing comparisons to current conditions as well, it will be clear that current and projected funding levels will not improve conditions for many. By including this comparison, the RTP will not oversell what the Region can achieve in terms of performance.

Other Performance Measures

The TAC is still working on evaluating the best measures to reflect three other goals, namely preservation, sustainability and productivity. Several measures have been discussed and a recommendation should be finalized shortly.

FISCAL IMPACT:

There is no fiscal impact.

Southern California Association of Governments

Performance Measurement Framework Recommendations

Presented to the
Transportation and Communications Committee
March 6, 2003

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2004 RTP Goals

Maximize mobility and accessibility for all people and goods in the region

Ensure travel safety and reliability for all people and goods in the region

Preserve and ensure a sustainable regional transportation system

Maximize the productivity of our transportation system

Protect the environment, improve air quality and promote energy efficiency

Encourage land use and growth patterns that complement our transportation

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The TAC agreed on a number of criteria for evaluating performance indicators

Indicators should be linked to the 2004 RTP goals

Indicators should be modally blind

Indicators should be measurable – for both monitoring and forecasting – to the extent possible

Indicators should coordinate with sub-regional and state-wide efforts to adopt consistent indicators

Performance results presented in the 2004 should show comparisons to both the baseline forecast and to the present so that stakeholders understand the limitations of current funding.

The TAC recommends speed and delay as indicators for mobility

Speed

- Easy for customers to understand and experience
- Can be measured for monitoring purposes (e.g., automatic detection, vehicle probes)
- Can be forecasted using travel demand models
- Is a modally blind indicator

Delay

- Reflects the incremental travel time due to difference in actual and reference speed (e.g., posted or free flow speeds)
- Can be converted for use in benefit cost modeling
- Reference speeds for different modes still being evaluated (e.g., what reference speeds should be used for local bus, local and arterial street auto, different rail modes)

The TAC recommends percent of work trips completed within 45 minutes in the pm peak period as the indicator for accessibility

The indicator is modally blind

The pm peak period experiences the highest delays in the region and is therefore deemed appropriate for accessibility measurement

Work trips within 45 minutes can be monitored through surveys and forecasted using travel demand models

The TAC recommends including the distribution of travel times to complement the accessibility indicator. The distribution will enable monitoring all segments of travel times

The TAC recommends using the same 2001 RTP indicators for environmental justice and geographic equity

Environmental justice reflects the impacts of the RTP on different groups (e.g., race, income level, disabled) to ensure fairness of the transportation decisions

Geographic equity reflects the impacts of the RTP on different sub-regions and presents the benefits and expenditures by sub-region.

The TAC recommends using the 2001 safety indicators for the 2004 RTP

The indicators reflect incidents and incident rates by type: fatalities, personal injuries, property damage

The indicator can be monitored using accident data sources (e.g., transit operators, Caltrans, CHP). Forecasting is limited to modal diversion impacts (i.e., different modes have different accident rates)

The indicator is modally blind

The indicator can be converted for use in benefit cost modeling.

Reliability is an important new performance measure that reflects customer priorities

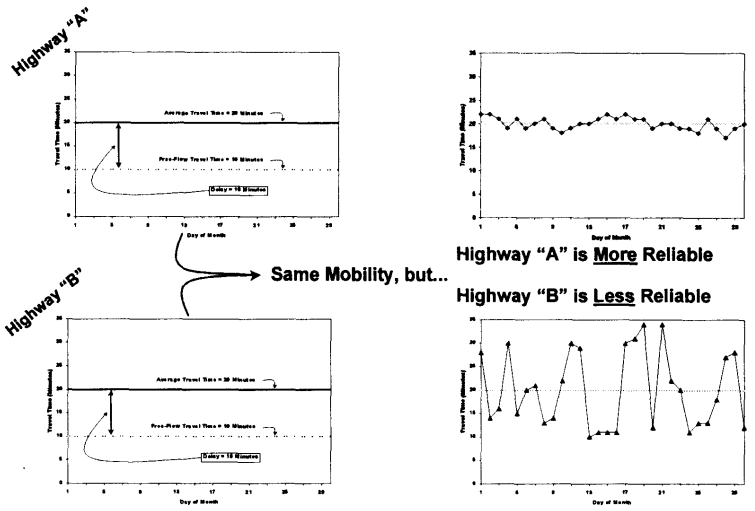
Day to day variations of travel time is a source of frustration for many travelers

Variability occurs most often due to non-recurring conditions such as: accidents, weather, special events, lane closure, operational problems

The delay indicator recommended for mobility does not address incremental delay due to non-recurrent conditions

Many studies (e.g., national, state) conclude that non-recurrent delay represents somewhere between 30 and 50 percent of all delay. The reliability indicator starts addressing the issue of non-recurrent conditions.

Highway reliability goes beyond average travel times



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The TAC recommends variability of travel time as the indicator for reliability

The indicator is modally blind and represents on time arrival (where on-time represents average travel time for auto and schedules travel time for transit)

Report the indicator either as 1 standard deviation divided by average travel time, or consistent with the national studies, as 2 standard deviations divided by average travel time

Transit reliability is generally higher than highway reliability

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The TAC recommends using the 2001 RTP emissions indicators for the 2004 RTP

The indicators used in 2001 included CO, NOX, PM10, SOX, and VOC

Emissions are modally blind

Emissions can be monitored and forecasted using SCAG's travel demand model

The emissions used in 2001 can be converted for use in benefit cost modeling

The TAC also recommends including CO2 emissions as an indicator for greenhouse effects.

The TAC recommends revising the 2001 RTP benefit cost indicator for use in 2004

The 2001 RTP assigns monetary values to benefits related to travel time, emissions, and accidents to derive the full RTP benefit cost indicator

The TAC recommends adding vehicle operating costs to the modeling effort to take into account the savings derived from modal shifts to transit and car pools, and the reduced costs associated with improved speeds (e.g., fuel costs)

The vehicle operating cost savings would be included in the overall benefit cost results.